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COUNTRY Poland**DATE DISTR.** 11 Feb. 1954**SUBJECT** Electric Power Installations in Poland**NO. OF PAGES** 49 25X1**DATE OF INFORMATION****REFERENCES:****PLACE ACQUIRED**

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THIS IS UNEVALUATED INFORMATION**General**

1. Since World War II, Poland has put forth an enormous effort to reconstruct her electric power installations and to reorganize the power industry. Most of the power plants and transmission lines were damaged during World War II and the machinery and equipment were run down. There was no integrated system of power transmission in prewar Poland and it was necessary that the recovered territories be linked with the rest of the country. Construction of transmission lines was carried out simultaneously with the repair and development of old, damaged power plants during the Three Year Plan (1947 - 1949). This period was followed by the Six Year Plan (1950 - 1955).
2. However, the speedy development and construction of power plants and substations and of high tension transmission lines posed many problems. These difficulties were caused by bottlenecks, complicated linkages, and the lack of proper transformers for the exchange of power between the north and west. Such problems were difficult to cope with because of insufficient experience, a lack of equipment, and the deficiency of power. Difficulties in the supply of equipment, considerable delay in the delivery of equipment and machinery which had to be imported, caused long delays in the execution of planned developments and new investments. As a result installations were often put into operation in a half-completed state. This, in turn, caused difficulties in exploitation, troublesome interruptions of power supply, and even complete breakdowns of the entire system for several hours. Many small power plants were completely closed down for economic reasons and because of a lack of spare parts for machinery.

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3. By 1953 almost all public utility (elektrownie zawodowe) power generating plants were linked to the network. At the same time a concerted effort was made to link industrial power plants (elektrownie przemyslowe) with existing high tension line systems and to increase their output in order to have a surplus of power.
4. Parallel with the development of this system, the electrification of villages and agriculture was carried out under the supervision of the Ministry of Agriculture. The electrification of villages and agriculture in the recovered territories was almost 100% completed in June 1953. In the eastern provinces of Poland, however, in spite of all efforts, electrification was still in process and the plans were only about 50% fulfilled.
5. With respect to financing the project, the State Commission for Economic Planning [] always provided credits and foreign currency needed by the Ministry of Power for the construction of installations and for the import of machinery. The credit allowance for all investments surpassed two billion zlotys for 1953. 25X1
6. The total production of electric power by public utility power stations amounted to about 7,000,000,000 KWH. in 1952. In 1953 it was to have reached about 8,500,000,000 KWH. This output was distributed roughly as follows:

Heavy industry	70%
Light industry	8%
Villages and agriculture	10%
General and domestic consumption	12%

The Upper Silesia region itself consumed more than 50% of the entire production of power. The oil industry consumed about 14,000,000 KWH. The maximum peak load rate of power achieved in the first quarter of 1953 was about 2,000 MW (about 1,400 MW by public utility and about 600 MW by industrial power plants).

7. Exchange of power with neighboring countries in 1952 was as follows:

To the USSR	about 1,000,000 KWH. (200 - 300 KW)
With Czechoslovakia	about 100,000,000 KWH. (about 20 MW)
With East Germany	about 30,000,000 KWH. (about 10 MW)

Usually Poland sent more power to Czechoslovakia and East Germany than she received from them. No power was received from the USSR in exchange.

8. The aim of the Six Year Plan was to supply electric power for the armaments and heavy industries which had priority; then for the electrification of villages and agriculture and finally for general use in homes, etc. There were stringent restrictions on consumption of electricity for general and domestic use, especially during peak-load hours. Rationing existed on the basis of 35 KWH. a month for three rooms in summer and 55 KWH. a month in winter months. This rationing made it impossible to use any electric appliances in the homes, for heating or for other purposes. Power was supplied in peak-load hours to larger cities and to the country only in the amounts necessary for security and for propaganda activities, such as radio broadcasts.

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9. There was a shortage of power in the following areas:

Southern District, especially Upper Silesia
Central District, Warsaw and Lodz area
Eastern District, Rzeszow, Moscice area
Lower Silesian District, Walbrzych area
Northern District, Bydgoszcz and Gdansk area
Surpluses of power did not exist.

10. The policy of the State Authority for Power Dispatching in the Ministry of Power was to supply sufficient power to the important industrial areas in the following order:

- a. Upper and Lower Silesia
- b. Dabrowski Basin (Zaglebie Dabrowskie), especially Bedzin, Sosnowiec
- c. Rzeszow, Moscice, Lodz

This was achieved, especially during peak-load hours, by cutting off the power for hours in villages, small towns (seldom larger towns), and entire suburbs of Warsaw. Basic policy also called for the maximum output from all, even old, equipment with no regard to normal wear and tear of machinery.

11. All power installations were above ground and were not camouflaged. Both high and low voltage transmission lines were overhead lines of steel and aluminum cable supported by various types of towers constructed of steel and wood. The construction was based on Polish electrotechnical norms (Polskie normy elektryczne). Most of the installations and equipment were old and worn out and the development and construction of new installations had not kept pace with the development of the heavy industry and the armaments industry.
12. Poland had mostly thermal coal-burning power plants. A few were hydroelectric. Power plants consumed about eight per cent of the entire production of coal in Poland. Strong pressure was brought to bear by the government on the power plants to be more economical in the use of coal; its consumption was controlled by the highest authorities.
13. In June 1953, about 60,000 employees of all categories were employed by the Ministry of Power in all the power installations. (Most installations worked on three shifts.) There were constant difficulties in trying to secure educated and experienced specialists as well as skilled, trained workers for the Ministry and for the power installations. Specialists tried to avoid employment in the power installations because they feared they would be held responsible for the technical difficulties and shortages over which they would have no control. This attitude was aggravated by the interference of the secret police (UB) and the Communist Party in all matters on all levels concerning power supply and personnel.
14. Power installations were guarded by uniformed and armed industrial guards who were under the jurisdiction of the Ministry of Public Security but who were formally subordinate to the Ministry of Power. Employees had identity cards and passes and a special permit

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was required for any one not working there in order to enter the installations. These permits were issued by the Ministry of Power or lower administrative echelons. The higher officials of the Ministry of Power and districts possessed yearly passes. All developments and plans concerning power production and distribution were regarded as secret.

15. The administration of electric power installations, production, and distribution, was centralized and controlled by the Ministry of Power. (Ministerstwo Energetyki - ME) [redacted] Poland, for administrative purposes as far as electric power was concerned, was divided into six districts which, in turn, were divided into areas and regions. This division was different from the governmental administrative division of the country. A district power administration office (Zarząd Energetyczny Okręgu - ZEO) was in charge of each district. Each ZEO was divided into about five areas (podokręgi). In charge of each area was an area administration office of the electric power system (Zakład Sieci Elektrycznych - ZSE) which in turn controlled several regional administrative offices (Rejonowy Zakład Sieci Elektrycznych - RZSE). [See Annex A] [redacted] 25X1
16. The distribution of electric power was also centralized and directed by a special department of the Ministry of Power called the State Authority for Power Dispatching (Państwowy Zarząd Dyspozycji Mocy - PZDM). The PZDM operated through its own subordinate branches at district and area level: the district power dispatching branches (Okręgowa Dyspozycja Mocy - ODM) and the area power dispatching offices (Rejonowy Punkt Dyspozycji Mocy - RPDM). A special department in the Ministry of Power called the Administration of Communications (Zarząd Łączności - ZŁ) was responsible for communications between the Ministry and subordinate branches and echelons down to the power plant level. This department cooperated closely with power dispatching branches on all levels. [See Annex B.]

Power Plants and Substations

[The following descriptions of power plants and substations in Poland are given by districts. The most efficient power plants are marked with two asterisks, moderately efficient plants are marked with one.] 25X1

17. The Central District Power Administration (ZEO Centralnego -Warsaw)

Power Plants

Warsaw**

Pruszkow*

Lodz**

Białystok

Zgierz

Plock

Substations

Szamoty

Nory

Zachodnia Warsaw

Janow

a. Warsaw Power Plant (Elektrownia Warszawska) [redacted]

(1) Location: Ulica Elektryczna, Warsaw, [Annex D].

(2) Layout: [See Annex E].

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- (3) Capacity: This plant had an installed capacity of about 100 MW. The maximum operating capacity in 1952 was about 80 MW. The difference in installed and operating capacity was due to constant repair of generators and turbines, and the lack of steam.

Boilers: Three boiler houses, two old and one new. Boiler House I had about eight boilers; Boiler House II had about 10 boilers; and Boiler House III had four boilers, all of which were new. (I and II worked at about 19 atmospheres; III worked at about 38 atmospheres.) Most of the boilers were the [] type. The temperature when the heat passed the (after) heater of the new boilers reached about 480° Celsius. 25X1

Generators: Two units at 35 MVA., one unit at 10 MW., and several small ones.

Transformers: Twelve units per about 10 MVA.

Circuit breakers: Most of the breakers were of the "Maloolejowe" type (small oil content).

- (4) There were several other industrial power plants in Warsaw, most of which were of small capacity and belonged to factories and various enterprises.
- (5) The power plant was part of a grid system of 110 KV. There were underground cables supplying the city of Warsaw and underground cables to the 110/34 KV. grid linking with the Zachodnia Warsaw substation. There were also transmission lines for power exchange with the Janow substation, the Lodz power plant and with the Nory and Szamoty substations for power exchange with the Stalowa Wola power plant.
- (6) Except for the underground cable, all installations were on the surface.
- (7) Source of power was peat coal of which about 20% was of very low grade.

b. Pruszkow Power Plant (Elektrownia Pruszkow)

- (1) Location: In the residential area of the town of Pruszkow /N 51-32, E 19-04/. 25X1
- (2) Layout: [] 25X1
- (3) Capacity: was about 15 MW. [] 25X1
- (4) This plant was connected with other power plants by the 110/35 grid through the Szamoty substation.
- (5) Coal was the source of power.

c. Lodz Power Plant (Elektrownia Lodz) []

- (1) Location: This plant was located in a residential area of the town of Lodz /N 51-30, E 19-30/. 25X1
- (2) Layout: [] 25X1

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25X1

- (3) Capacity: Maximum operating capacity was about 50 MW. It had circuit breakers of the "Maloolejowe" type.
- (4) There were other industrial power plants in Lodz.
- (5) The power plant was connected with other plants by the 110/35 grid through the Janow substation.
- (6) There were no underground installations.
- (7) Source of power was peat coal of which about 25% was of very low grade.

d. Bialystok Power Plant (Elektrownia Bialystok)

- (1) Location: This plant was located somewhere in Bialystok N 53-08, E 23-107.
- (2) Layout: 25X1
- (3) Capacity: Maximum operating capacity was about 10 MW. It was connected with other power plants through the grid.
- (4) There were no underground installations.
- (5) The source of power was coal.

e. Zgierz Power Plant (Elektrownia Zgierz)

- (1) Location: This plant was located somewhere in the town of Zgierz N 51-51, E 19-257.
- (2) Layout: 25X1
- (3) Capacity: About 4 MW.
- (4) It was connected with other power plants.
- (5) Source of power was coal.

f. Plock Power Plant (Elektrownia Plock)

- (1) Location: This plant was located somewhere in the town of Plock N 52-33, E 19-427.
- (2) Layout: 25X1
- (3) Capacity: About 6 MW.
- (4) It was connected with other power plants.
- (5) The source of power was coal.

g. Szamoty Substation (Stacja Szamoty)

- (1) Location: This plant was located near the village of Szamoty N 52-12, E 20-557 in an open area. It was not near any industrial plant. 25X1
- (2) Layout: 25X1
- (3) Installations: There was no underground installation. 25X1

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25X1

- (4) It was on the 110 KV. transmission line to the Roznow plant, on the 30 KV. transmission line to the Warsaw plant, and on the 30 KV. transmission line to the Pruszkow plant.
- (5) It had no rotating equipment. Although close to a railroad, it had no siding.

h. Nory Substation (Stacja Nory)

- (1) Location and Layout: This plant was located somewhere in the Warsaw area. [redacted] 25X1
- (2) Installations: This plant had no underground installation. [redacted] 25X1
- (3) It was on the 30 KV. transmission line to the Szamoty substation.
- (4) It had no rotating equipment.
- (5) It had no railroad siding.

i. Warsaw Zachodnia Substation (Stacja Warszawa Zachodnia) [redacted]

- (1) Location: This plant was located in a lightly populated residential area of Warsaw. 25X1
- (2) Installations: [redacted] It was on a 110 KV. transmission line to Janow. 25X1
- (3) It had no rotating equipment.
- (4) No railroad station was close to it. It had no railroad siding.

j. Janow Substation (Stacja Janow) [redacted]

- (1) Location: This substation was located in an open area near Janow N 51-45, E 19-28. It was not close to any power plant. 25X1
- (2) It was on the 220 KV. line to Lagisza, the 110 KV. line to Warsaw, and on several other lines of lower tension. It was connected with the Lodz power plant.
- (3) There was no rotating equipment.
- (4) It was close to a railroad but did not have its own siding.

18. The Eastern District Power Administration (ZEO Wschodniego - Radom)Power Plants

Stalowa Wola**

Starachowice*

Lublin*

Moscice (industrial)

Radom

Pionki (industrial)

Substations

Rozki

Starachowice

Boguchwala

Abramowice

Krosno

Ostrowiec

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Power Plants

Skarzysko (industrial)

Zamosc

Kielce

Roznow** (hydroelectric)

Czchow* (hydroelectric)

Mecinka

Substations

Moscice

a. Stalowa Wola Power Plant (Elektrownia Stalowa Wola)

25X1

- (1) Location: See Annex F.
 - (2) Layout: See Annex G.
 - (3) Capacity: 36 MW; the maximum operating capacity was 34 MW. The difference between the installed and the operating capacity was caused by strong slugging of the boilers and weak superheaters in the boilers. The total output for the year 1952 was about 6,000 hours of production at maximum capacity.
 - (4) Equipment: Boilers: Four identical water pipe boilers with superheaters. The preheaters were of the "Greene" type. The capacity of each boiler was about 45 t/h at about 37 At. The condensers were cooled by water from a channel. The walls of the boilers were cooled by a water pipe system. The steam reached a temperature of 485° Celsius after it passed the superheaters. The boilers were supplied with distilled water. All boilers had a mechanical blowing system.
- Turbogenerators: Two identical pairs, 20 MVA.
- Transformers were combined with the turbogenerators.
- Circuit breakers were mostly of the "Maloolejowe" type.
- (5) There were no other power plants in Stalowa Wola.
 - (6) It worked on a 110 KV grid. It was not underground.
 - (7) One three-phase 110 KV power line went through Ostrowiec to the Starachowice substation, one to Abramowice, one to Boguchwala.
 - (8) It was a thermal power plant; peat coal (about 80%) and very low grade coal (about 20%) were used as fuel.

b. Starachowice Power Plant (Elektrownia Starachowice)

25X1

- (1) Location: This plant was located at Starachowice N 51-04, E 21-04 in a residential area. It had no underground installation and was not camouflaged.
- (2) Capacity: The installed capacity was 11 MW; the maximum operating capacity was 10 MW.

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25X1

- (3) Equipment: Boilers: There was an old boiler house in which about four boilers operated at 19 At. There was one new boiler in a new boiler house which used a very low grade coal and dust and operated at 33 At.

Turbogenerators: New "Ljungstrom" 7.5 MW. Turbogenerator was installed by Swedish engineers in 1952. Older generators were from [redacted] The lack of power reserves in the boilers always made itself felt. 25X1

- (4) There were no other power plants in the vicinity.
- (5) It was connected with other plants and supplied the 110 KV grid through the Starachowice substation.
- (6) Coal was used as fuel.

c. Lublin Power Plant (Elektrownia Lublin) [redacted]

25X1

- (1) Location: This plant was located in a residential area on the outskirts of Lublin N 51-15, E 22-34, close to a road leading to Abramowice. There was no camouflage and no underground installation. For layout see Annex H.
- (2) Capacity: The installed capacity was 16 MW; the maximum operating capacity was 14.7 MW.
- (3) Equipment: Boilers: Three old boilers and one new 50 tn. boiler which was constructed in 1953 for the 10 MW turbogenerator.

Turbogenerators: There were three old "Ljungstrom" turbo-generators of a maximum capacity of 4.7 MW, constructed in 1924/1930 and one 10 MW turbogenerator.

Transformers: There were three 30 KV, four MVA transformers for connection with the Abramowice substation.

Circuit breakers: Oil immersion type circuit breakers for the Lublin city net.

- (4) The plant was connected with other power plants. A 30 KV transmission line joined the 110 KV grid at the Abramowice substation which was reenforced in 1953. The transmission line was supported by steel masts.
- (5) Coal was used as fuel.

d. Moscice Power Plant (Elektrownia Moscice) [redacted]

25X1

This plant was an industrial power plant which belonged to the Dzierzynski Nitrogen Factory (Zaklady Azotowe imienia Dzierzynskiego). It had been constructed to supply this chemical combine.

- (1) Location: It was located within the factory buildings in Moscice N 50-01, E 20-56. It had no underground installation.
- (2) Capacity: The maximum operating capacity of this plant was 29 MW in January 1952.
- (3) Equipment: Boilers: Eight water pipe boilers working at 19 At.

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25X1

Turbogenerators: About five of [] Company production and one new 7.5 MW turbogenerator were used as power in the chemical process of the factory. 25X1

- (4) It supplied the chemical plant and the surplus of power was directed into the 110 KW grid. It worked with other power plants in the grid system.
- (5) A 30 KW transmission line joined the 110 KV grid through the Moscice substation.
- (6) Coal was used as fuel.

e. Radom Power Plant (Elektrownia Radom) []

25X1

- (1) This plant was located within the residential area of the town of Radom. [] There was no underground installation. 25X1
- (2) The installed capacity was 5.2 MW and the maximum operating capacity was 4.5 MW.
- (3) It was a very old, uneconomical power plant.
- (4) Boilers: It had four very old boilers of 12 At. and turbo-generators of [] Company type which were very run-down. The circuit breakers were of the oil immersion type. 25X1
- (5) The plant supplied the town and the area nearby. It was connected to the grid through a 30 KV transmission line.
- (6) Coal was used as fuel.

f. Roznow Hydroelectric Power Plant (Elektrownia Roznow) []

25X1

- (1) Location: This plant was located in a wooded area on the west bank of the Dunajec River near Roznow N 49-46, E 20-42 /See Annex I and layout, Annex J./ The water reservoir contained several million cubic meters of water. The dam was about 500 m. long and about 8 m. wide. It was about 40 m. high and of concrete construction. There was a road across the dam and locks. The difference in elevation before and behind the dam was about 29 m. There were no underground installations and no camouflage.
- (2) Capacity: The installed and operating capacity was about 50 MW.
- (3) Equipment: There were four vertical turbogenerators, each of 12.5 MVA of [] production of 5,250 V with two vertical exciter generators (wzbudnice). There were transformer blocks for the 110 KV grid. 25X1
- (4) The plant was connected with other power plants. There was one 110 KV transmission line to Starachowice, a 30 KV line to Czchow, a 30 KV line to Nowy Sacz, and a 30 KV line to Mecinka. The 110 KV transmission line was supported by steel towers.

g. Czchow Hydroelectric Power Plant (Elektrownia Czchow) []

25X1

- (1) Location: This plant was located near Czchow N 49-05, E 20-41 in a wooded area on the western bank of the Dunajec River. /See Annex K for layout./ The water from the Roznow

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25X1

reservoir was the source of power. The difference in turbine wheel and pipe intake was about 15 m. There was a concrete dam across the river with a road over it.

- (2) Capacity: The installed capacity was 5 MVA and the maximum operating capacity was 4.8 MW.
- (3) Equipment: Turbogenerators: one vertical 5,250 V power factor - 0.8.
Transformers: two 2 MVA 5/30 KV, one 1 MVA 5/30 KV.
- (4) The plant was connected with other power plants, through a 30 KV transmission line to Roznow and to Rabka.
- (5) There were no underground installations nor any camouflage.

h. Mecinka Power Plant (Elektrownia Mecinka)

25X1

- (1) Location: This plant was located three kilometers south of the Jedlicze railway station $\angle N$ 49-43, E 21-397 in a wooded region. It had no camouflage and no underground installations.
- (2) Capacity: The installed capacity of this plant was 2.3 MW and the maximum operating capacity was 2.1 MW.
- (3) Equipment: The plant had very old machinery. It had three horizontal gas engines; the largest unit was 800 KVA. Transformers, one of about 2 MVA and one of 1 MVA; both transfer at 3/30 KW. Circuit breakers were of the oil immersion type.
- (4) It worked on a 30 KV grid supplying power for the oil industry in the area.
- (5) Natural gas was used as fuel.

i. Pionki Power Plant (Elektrownia Pionki)

This plant was an industrial power plant and operated probably for the armaments industry.

- (1) Location: Located in Pionki $\angle N$ 51-29, E 21-277.
- (2) Capacity: Maximum operating capacity was about 8 MW.
- (3) Equipment:
- (4) There were no other power plants in Pionki. It was connected with the 110 KV grid probably through the Starachowice substation by a 30 KV transmission line.
- (5) Coal was used as fuel.

j. Skarzysko Power Plant (Elektrownia Skarzysko - Kamienna)

This plant was an industrial power plant and probably was under control of the Ministry of National Defense. this plant was built to supply power for the armaments industry in the area.

- (1) Location: The plant was located in Skarzysko-Kamienna $\angle N$ 51-07, E 20-547;

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25X1

- (2) It had a maximum operating capacity of about 6 MW.
- (3) This plant was connected with other power plants. A 30 MW transmission line linked it with the Starachowice substation.
- (4) Coal was used as fuel.

k. Zamosc Power Plant (Elektrownia Zamosc)

- (1) This plant was located in the town of Zamosc N 50-43, E 23-157.
- (2) Capacity: The installed capacity was 3 MW and the maximum operating capacity was 1.8 MW.
- (3) Equipment: Old and run-down, turbogenerators in bad condition; there was a lack of power in the boilers.
- (4) There were no other power plants in Zamosc.
- (5) It was connected with the Lublin power plant and others in the Zamosc region. It supplied the power for the USSR.
- (6) Coal was used as fuel.

1. Kielce Power Plant (Elektrownia Kielce)

- (1) [redacted] this plant [redacted] was located in Kielce. There were no other power plants in this town. No underground installations. 25X1
- (2) The maximum operating capacity was 3 MW.
- (3) The plant supplied power to Kielce and the surrounding area. It was connected with a 30 KV grid.
- (4) Coal was used as fuel.

m. Rozki Substation (Stacja Rozki)

- (1) Location: See Annex I. This station was located near Rozki N 51-21, E 21-047 in an open field. It was neither near a power plant nor an industrial plant.
- (2) It was a new substation partly constructed and put into operation in 1953 for 110 KV. Further construction was going on to increase the voltage to 220 KV.
- (3)
- (4) The substation was on the 220 KV transmission line to Jaworzno II, and on the 110 KV transmission line to Szamoty and to Starachowice.
- (5) It had its own railroad siding.

n. Starachowice Substation (Stacja Starachowice)

- (1) Location: This station was located in Starachowice ~~N~~ 51-04, E 21-047 in a sparsely developed area. It had no underground installations.
- (2) Equipment: [redacted] there had been no changes during or since World War II.

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- (3) There were lines from this substation to the 110 KV transmission line to Stalowa Wola, and to the 110 KV transmission line to Roznow, Szamoty and Rozki.
- (4) It was not close to a power plant; it was connected by a railroad siding. This was a very important substation for the eastern district.
- (5) It had a synchronous compensator of 10 MVA.

o. Boguchwala Substation (Stacja 110 KV Boguchwala)

25X1

- (1) This plant was located about 300 m. from the railroad station in Boguchwala N 49-59, E 21-57. There were no underground installations.
- (2) The installation had three transformers each of 110 MVA to regulate the load.
- (3) The station was on the 110 KV line to Stalowa Wola, Moscice, Przemysl, to Krosno, and Sanok. A special line led to a plant (probably an armaments factory) called the Telecommunications Equipment Plant (Wytownia Sprzetu Komunikacyjnego - WSK), and to a porcelain factory in Boguchwala.

p. Abramowice Substation (Stacja 110/30 KV Abramowice)

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- (1) This substation was located about five kilometers south of Lublin in an open field. There were no underground installations
- (2) It was a newly constructed substation to replace an old and very important one for the Lublin area.
- (3) It lay on the 110 KV transmission line to Stalowa Wola and on several 30 KV transmission lines.
- (4) It was about two kilometers from the railroad but had no siding.

q. Krosno Substation (Stacja 110 KV Krosno)

- (1) This substation was located in an open field near Krosno N 49-41, E 21-47. There were no underground installations.
- (2) It lay on the 110 KV transmission line to Boguchwala; 30 KV transmission lines supplied the oil industry.

r. Ostrowiec Substation (Stacja 110 KV Ostrowiec)

- (1) This substation was located in a sparsely populated area in Ostrowiec N 50-56, E 21-24. It was modernized and enlarged in 1952. There were no underground installations. It was not close to a power plant.
- (2) It lay on the 110 KV transmission line to Stalowa Wola and Starachowice, with 30 KV transmission lines to the plant at Ostrowiec

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s. Moscice Substation (Stacja 110/30 KV Moscice)

25X1

- (1) This substation was located in Moscice N 50-01, E 20-36 in a sparsely populated, residential area. It had no underground installations.

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- (2) It lay on the 110 transmission line to Starachowice, Boguchwala, Pradnik, Roznow.
- (3) It was not close to a power plant but was close to a rail-road and siding.

19. The Southern District Power Administration (ZEO Poludniowego, formerly Katowice, since 1953 Stalinogrod)

Power Plants

Substations

Laziska Gorne **

Chorzow

Chorzow **

Lagisza

Zabrze **

Pradnik

Szombierki **

Groszowice

Miechowice **

Jaworzno I

Jaworzno II **

Bedzin **

Krakow *

a. Laziska Gorne Power Plant (Elektrownia Laziska Gorne)

25X1

- (1) This plant was located in Laziska Gorne N 50-09, E 18-51 in an industrial area near a chemical plant.
- (2) Maximum operating capacity was 190 MW.
- (3) [REDACTED] 25X1
- (4) It was connected with other power plants by 110 KV and 60 KV transmission lines. [REDACTED] 25X1
- (5) Coal was used as fuel.
- (6) The plant employed about 350 men.

b. Chorzow Power Plant (Elektrownia Chorzow)

25X1

- (1) This plant was located in the northern part of Chorzow N 50-18, E 18-58 not far from a steel plant (name unknown to me). There was no underground installation.
- (2) Maximum operating capacity was about 170 MW.
- (3) [REDACTED] 25X1
- (4) It was connected with other power plants and with the grid through 110 KV and 60 KV transmission lines.
- (5) Coal was used as fuel.

c. Zabrze Power Plant (Elektrownia Zabrze)

25X1

- (1) This plant was located in Zabrze N 50-19, E 18-47 in an industrial area. [REDACTED] There was 25X1 no underground installation.

SECRET

SECRET

-15-

25X1

- (2) The maximum operating capacity was about 30 MW.
- (3) It was connected with other power plants in the Lower Silesian District through 110 KV and 60 KV transmission lines to the grid.

d. Szombierki Power Plant (Elektrownia Szombierki) [redacted]

25X1

- (1) This plant was located between Stalinogrod and Gliwice in an industrial area; [redacted] It had no under- 25X1
ground installations.
- (2) The maximum operating capacity was about 50 MW.
- (3) It was connected with other power plants and to the grid on 110 KV and 60 KV transmission lines.
- (4) Coal was used as fuel.

e. Miechowice Power Plant (Elektrownia Miechowice)

25X1

- (1) [redacted]
- (2) The maximum operating capacity was about 60 MW.
- (3) The plant was connected with the 110 KV grid to Lagisza and other 60 KV lines.
- (4) Development was underway to bring the installed capacity to about 200 MW. New turbines were installed [redacted]
[redacted] and new boilers by a Czechoslovakian firm. 25X1
- (5) Coal was used as fuel.

f. Jaworzno I Power Plant (Elektrownia Jaworzno I)

25X1

- (1) This plant was located near Jaworzno /N 51-02, E 18-39/ close to a built-up area. [redacted]
- (2) It was an old power plant with a maximum operating capacity of about 18 MW.
- (3) It was connected to the grid by a 30 KV transmission line.
- (4) Coal was used as fuel.

g. Jaworzno II Power Plant (Elektrownia Jaworzno II) [redacted]

25X1

- (1) This plant was located near Jaworzno in an open space. [redacted]
[redacted] There were no underground installations. 25X1
- (2) It was a new power plant not completely finished. The construction was being carried out under the supervision of Soviet engineers. [redacted] Jaworzno II will 25X1
be one of the most important power plants in the Silesian area.
- (3) In May 1953 the maximum operating capacity was about 50 MW; but with the addition of a new 50 MW unit, which was under construction, the capacity will be 100 MW at the end of 1953.
- (4) It was connected with other power plants. It lay on the line designed for 220 KV but operated on the 110 KV transmission line. It was connected with the Rozki substation. Another

SECRET

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25X1

110 KV transmission line joined the 110 KV grid at Laziska Gorne substation through Chorzow. Future plans called for the connection of the Jaworzno II plant with the Czechoslovakian grid by a 220 KV transmission line. These plans were kept secret.

- (5) Coal was used as fuel.

h. Bedzin Power Plant (Elektrownia Bedzin)

25X1

- (1) This plant was located in an industrial area of Bedzin N 50-20, E 19-097. There were no underground installations.

25X1

- (2) The maximum operating capacity was about 26 MW.
(3) It was connected with other power plants. It was connected to the grid with 60 KV and 110 KV transmission lines.
(4) Coal was used as fuel.

i. Krakow Power Plant (Elektrownia Krakow)

- (1) This plant was located in a built-up area of Krakow. For location, see Annex N.7 There were no underground installations.
(2) The maximum operating capacity was about 20 MW.
(3) It was connected by a 30 KV transmission line to the Pradnik substation.
(4) Coal was used as fuel.

j. Chorzow Substation (Stacja 110 KV Chorzow)

25X1

- (1) This substation was located in a built-up area of Chorzow. There were no underground installations. The substation building had a roof, an exception to the rule. It was close to the Chorzow power plant.
(2) There was no rotating machinery.
(3) It was connected to the 110 KV transmission lines to Pradnik, Laziska Gorne, and Miechowice. It also supplied the Kosciuszko steel plant in Chorzow.

k. Lagisza Substation (Stacja 220 KV Lagisza)

25X1

- (1) This substation was located in an open field about 10 km. southwest of Zawiercie N 50-13, E 19-177.
(2) It was newly constructed. It had no underground installations.
(3) It was connected to the 220 KV transmission line to Janow, and to the 110 KV transmission line to Chorzow, and to Jaworzno II.
(4) It had no rotating machinery.

25X1

SECRET

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25X1

1. Pradnik Substation (Stacja 110 KV Pradnik)

25X1

- (1) This substation was located in Pradnik N 50-06, E 19-57 about three kilometers north of Krakow in a sparsely built area near the Solvay soda factory. It had no underground installation.
- (2) It had no rotating machinery.
- (3) It was connected to the 110 KV transmission line to Chorzow and Moscice, a 30 KV line to the Krakow power plant, and to the Nowa Huta steel works.

m. Groszowice Substation (Stacja Groszowice)

- (1) This plant was located in Groszowice N 50-38, E 17-58 in a sparsely populated area. It had no underground installations and was not close to a power plant.
- (2) It had no rotating machinery.
- (3) It was connected by a 110 KV transmission line to Czechnica and Zabrze and to other lower transmission lines.

20. The Lower Silesia District Power Administration (ZEO Dolnoslaskiego - Wroclaw)Power PlantsSubstations

Viktoria (Walbrzych) **

Czechnica

Kalawsk *

Boleslawiec

Skaleczno *

Lukowice

Pilichowice * (hydroelectric)

Palowice

a. Viktoria Power Plant (Elektrownia Viktoria)

25X1

- (1) This plant was located about five kilometers south of Walbrzych N 50-46, E 16-17 in an industrial area. It had no underground installation.
- (2) The maximum operating capacity was about 70 MW.
- (3) It had Benson-type boilers.
- (4) It was connected with a 100 KV transmission line to the Palowice substation to the 100 KV grid, and to the Porici (Czechoslovakia) substation.
- (5) Coal was used as fuel.

25X1

b. Kalawsk Power Plant (Elektrownia Kalawsk)

25X1

- (1)
- (2) The maximum operating capacity was about 12 MW.
- (3) It was connected to the 40 KV grid.

SECRET

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25X1

- (4) Coal was used as fuel.
- (5) It was an old German power plant.

e. Skaleczno Power Plant (Elektrownia Skaleczno)

- (1) [redacted] this power plant [redacted] was somewhere southwest of Wroclaw.
- (2) The maximum operating capacity was 8 MW.
- (3) It was connected to the 30 KV grid.
- (4) Coal was used as fuel.

25X1

d. Pilichowice Hydroelectric Power Plant (Zespol Wodny Pilichowice)

25X1

- (1) This plant was located about two kilometers south of the railroad station in Mauer N 51-15, E 20-08 in a wooded area. See Annex O. The installation was not underground; it was on the northwest side of the dam. The dam, of concrete construction, was about 120 m. long and about five meters wide at the top. The dam had locks and a road on top.
- (2) The maximum operating capacity was about 8 MW.
- (3) It had five horizontal turbines.
- (4) It was connected with 40 KV transmission lines in the direction of Palowice and the Jelenia Gora area.
- (5) This was an old German hydroelectric plant.

e. Czechnica Substation (Stacja Czechnica) [redacted]

25X1

- (1) This substation was located about five kilometers southwest of Wroclaw, in a sparsely populated area. It was not close to a power plant. [redacted] It had no underground installation.
- (2) It was connected to the 100 KV transmission line in the direction of Palowice and supplied the city of Wroclaw and its surrounding area.
- (3) There was no rotating machinery.
- (4) It lay close to the railroad.

25X1

f. Boleslawiec Substation (Stacja 100 KV Boleslawiec)

- (1) This was a substation for exchanging power with East Germany. It was located in open country near Boleslawiec N 51-16, E 15-34. It had no underground installation. It was not close to a power plant.
- (2) The station was connected to the 100 KV transmission line to Hirschfelde, East Germany, to Boleslawiec, Dychow, and also to several 40 KV lines.
- (3) There was no rotating machinery.

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25X1

g. Lukowice Substation (Stacja 110 KV Lukowice)

- (1) [redacted] this substation. [redacted] was somewhere between Boleslawiec and Dychow in a sparsely populated area. It was not close to a power plant. 25X1
- (2) There was no rotating machinery.
- (3) It was connected to the 100 KV transmission line to Dychow and Palowice.

h. Palowice Substation (Stacja 100 KV Palowice) [redacted]

25X1

- (1) This was one of the most important substations in the Lower Silesian District. It was located along the highway (Autobahn) in an open field [redacted]. It had no underground installation. 25X1
- (2) The substation was not close to a power plant and had no rotating machinery.
- (3) It was connected to the 100 KV transmission line to Czechnica, Lukowice, and the Viktoria Power Plant, as well as to several lower tension transmission lines.

21. The Western District Power Administration (ZEO Zachodniego - Poznan)Power PlantsSubstations

Poznan **

Stargard

Gorzow **

Pakosc

Szczecin *

Nowogard

Bialogard

Jastrowie (hydroelectric)

Dychow ** (hydroelectric)

a. Poznan Power Plant (Elektrownia Poznan - Czerwone) [redacted]

25X1

- (1) This plant was located in the town of Poznan $\angle N$ 52-25, E 16-58/ opposite an island in the Warta River, in a sparsely populated area $\angle N$ 52-28, E 16-59/ . It had no underground installation.
- (2) The maximum operating capacity was about 30 MW.
- (3) It was connected with other power plants by a 110 KV transmission line to Pniewy and Gniezno.
- (4) Coal was used as fuel.

b. Gorzow Power Plant (Elektrownia Gorzow)

- (1) This plant was located in Gorzow $\angle N$ 51-02, E 18-26/ . [redacted] 25X1
- (2) The maximum operating capacity was about 30 MW.

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25X1

(3) It was connected to a 110 KV transmission line to Dychow, Stargard, and Pniewy.

(4) Coal was used as fuel.

c. Szczecin Power Plant (Elektrownia Szczecin)

25X1

(1) This plant was an old German power plant reconstructed after World War II. It was located in the port area of Szczecin N 53-25, E 14-35. There was no underground installation.

(2) It had a maximum operating capacity of about 20 MW.

(3) It was connected to the 110 KV transmission line to Stargard.

(4) Coal was used as fuel.

d. Bialogard Power Plant (Elektrownia Bialogard)

(1) This plant was located in Bialogard N 54-00, E 16-00. It had no underground installation.

(2) It had a maximum operating capacity of about 16 MW.

(3) It was connected to a 110 KV transmission line to Stargard, and to a 40 KV line to Slupsk.

(4) Coal was used as fuel.

e. Jastrowie Hydroelectric Power Plant (Elektrownia Jastrowie)

(1) This plant was located near Jastrowie N 53-25, E 16-49 in an open field. There was no underground installation.

(2) The maximum operating capacity was about 1.5 MW.

(3) It was not connected with other power plants.

25X1

f. Dychow Hydroelectric Power Plant (Elektrownia Dychow)

(1) This plant was located near Dychow N 51-58, E 15-05.

(2) The maximum operating capacity was about 60 MW.

(3) The equipment of this hydroelectric power plant was removed in 1945 by the Soviets but returned to Poland in 1952.

25X1

(4) It was connected to a 110 KV transmission line to Pniewy, Gorzow, and Boleslawiec.

g. Stargard Substation (Stacja 110 KV Stargard)

25X1

(1) this substation was situated in a sparsely inhabited area southwest of Stargard N 53-20, E 15-03. It was not close to a power plant.

25X1

(2) It had no rotating machinery.

(3) It was connected to the 110 KV transmission line to Nowogard, Szczecin, and Gorzow.

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25X1

h. Pakosc Substation (Stacja 110 KV Pakosc)

- (1) This plant was located near Pakosc N 52-48, E 18-06 but It was not close to a 25X1
railroad.
- (2) There was no rotating machinery.
- (3) It was connected to the 110 KV transmission line to Jasiniec and Gniezno.

i. Nowogard Substation (Stacja 100 KV Nowogard)

- (1) This plant was located near Nowogard N 53-39, E 15-07 in an open field. It was not close to a power plant but was close to a railroad.
- (2) There was no rotating machinery.
- (3) It was connected with the 100 KV transmission line to Bialogard, Stargard and to other transmission lines of lower voltage.

22. The Northern District Power Administration (ZEO Polnocnego located in Bydgoszcz /N 53-09, E 18-00/ (Distribution Branch in Gdansk)Power Plants

Olowianka **

Gdynia I *

Gdynia II *

Lebork Lauenburg

Glebokie Jeziora * (hydroelectric)

Elblag *

Zur * (hydroelectric)

Jasiniec

Torun

Smykala (hydroelectric)

Substations

Lebork

Slupsk

Reda

Grabowek (Gdynia)

Lesniewo

Jasiniec

Pakosc

a. Olowianka Power Plant (Elektrownia Olowianka)

25X1

- (1) This plant was located in Olowianka, in Gdansk N 54-21, E 18-40 in a built-up area. There was no underground installation.
- (2) The maximum operating capacity was 30 MW.
- (3) It was connected to a 60 KV line to Lesniewo, and to Gdynia.
- (4) Coal was used as fuel.
- (5) It was one of the principal power plants for the Gdansk port and area.

SECRET

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25X1

b. Gdynia I Power Plant (Elektrownia Gdynia I)

25X1

- (1) This plant was located in the port area of Gdynia.
- (2) The maximum operating capacity was about 12.5 MW.
- (3) It was connected with a 60 KV transmission line to Olowianka.
- (4) It was reconstructed after World War II, and had no underground installation.
- (5) Coal was used as fuel.

c. Gdynia II Power Plant (Elektrownia Gdynia Miasto II)

- (1) This plant was located in Gdynia near Grabowek. It had no underground installation.
- (2) The maximum operating capacity was about 12.5 MW.
- (3) It was connected by a 60 KV transmission line to the Grabowek substation.
- (4) The plant was reconstructed after World War II.
- (5) Coal was used as fuel.

25X1

d. Lebork Power Plant (Elektrownia Lebork)

25X1

- (1) This plant was located in a wooded area in Lebork \angle N 54-33, E 17-46.
- (2) It was a local power plant not connected to the 110 grid. It was connected to a 15 KV line to the Lebork substation. In 1953 the plant belonged to the Institution for Invalids (Zaklad Inwliadow former German Heil Anstalt) and was primarily to supply steam for central heating.
- (3) The installed capacity was 930 KVA; maximum operating capacity was 630 KVA. It had two vertical boilers. There were no underground installations.
- (4) Coal was used as fuel.

e. Glebokie Jeziora Hydroelectric Power Plant (Zespol Elektrowni Wodnych Glebokie Jeziora)

25X1

- (1) This plant was located in a wooded area five kilometers south-west of Lebork. \angle See Annex E
- (2) The maximum operating capacity was about 9 MW.
- (3) It had five turbines and no underground installations.
- (4) The plant was connected with the 40 KV transmission line to Slupsk and Lebork, and by a 15 KV line to Bytow. I have no other information.
- (5) To the "Zespol" (combine) belonged also two very small hydroelectric power plants.

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25X1

f. Elblag Power Plant (Elektrownia Elblag)

- (1) The plant was located in Elblag N 54-10, E 19-23.
- (2) The maximum operating capacity was about 18 MW.
- (3) It was connected with the 60 KV transmission line to Lesniewo and was newly designed for a 110 KV transmission line but operated on a 60 KV line to Olsztyn. It had no underground installations.
- (4) Coal was used as fuel.

g. Zur Hydroelectric Power Plant (Elektrownia Wodna Zur)

- (1) [redacted] 25X1
- (2) The maximum operating capacity was about 8 MW.
- (3) It was connected with a 60 KV transmission line to Lesniewo. It had no underground installation. [redacted] 25X1
- (4) Coal was used as fuel.

h. Jasiniec Power Plant (Elektrownia Jasiniec) [redacted]

25X1

- (1) This plant was located about five kilometers west of Bydgoszcz N 53-06, E 17-53.
- (2) The maximum operating capacity was about 26 MW.
- (3) It was connected with a 60 KW transmission line to Lesniewo. It had no underground installations.
- (4) Coal was used as fuel.

i. Torun Power Plant (Elektrownia Torun)

- (1) This plant was located in Torun N 53-02, E 18-37. [redacted] 25X1
- (2) It was a very old power plant with a maximum operating capacity of about 1 MW. It had no underground installations.
- (3) It was connected with a 60 KV grid to Lesniewo.
- (4) Coal was used as fuel.

j. Smykala Hydroelectric Power Plant (Elektrownia Wodna Smykala)

- (1) [redacted]. It was located a few kilometers 25X1 north of Bydgoszcz N 53-09, E 18-00.
- (2) The maximum operating capacity is [redacted] 25X1
- (3) It was connected to the network by a 30 KV transmission line. [redacted] 25X1

k. Lebork Substation (Stacja Lebork 60/40/15 KV) [redacted]

25X1

- (1) This plant was located near the village of Cewice in a partly built-up area. It was located close to a railroad. See Annex Q.
For layout see Annex R.

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25X1

- (2) It was a new 110 KV substation constructed in 1949 close to the old prewar substation. It was near the Leborg power plant but had no rotating machinery.
- (3) The substation was connected to a transmission line designed for 110 KV which was operating at 60 KV to Gdynia. A 40 KV transmission line connected it to the Glebokie Jeziora Hydroelectric Power Plant, and a 15 KV transmission line connected it to Cewice, Wieck, Zwartowko and Wejherowo.

1. Slupsk Substation (Stacja 40/15 KV Slupsk)

25X1

- (1) This substation was located in the town of Slupsk $\angle N$ 54-27, E 17-027 in a built-up area. It was not close to a power plant but was close to a railroad.
- (2) Its principal role was to supply the Hel Peninsula.
- (3) It was connected to a 15 KV transmission line to Puck-Hel and to Gdynia.
- (4) There was no rotating machinery.

m. Reda Substation (Stacja 15 KV Reda)

25X1

- (1) This substation was located in Reda $\angle N$ 54-37, E 18-217, close to the fork on the Gdynia-Puck highway where the highway to Wejherowo joins it.
- (2) It had no rotating machinery, only a reduction transformer.
- (3) It was connected by a 15 KV transmission line to Wejherowo, Gdynia, and Puck.
- (4) It was not close to a railroad and had no railroad siding.

n. Grabowek Substation (Stacja Grabowek 60 KV)

25X1

- (1) This substation was located in Grabowek $\angle N$ 54-32, E 18-387, a suburb of Gdynia.
- (2) It was a modern substation (with a roof) which connected the Gdynia power plants with Gdansk and had a 60 KV transmission line to Leborg.
- (3) It probably had a few transformers; 3 x 5 MVA, 60/5 KV.
- (4) It probably had a railroad siding.

o. Lesniewo Substation (Stacja Lesniewo 110/60 KV)

- (1) This substation was located in a partly built-up area in Lesniewo $\angle N$ 54-21, E 18-407. It was a junction substation between Gdansk, the Gdynia area, Olsztyn, and Bydgoszcz.
- (2) It was a newly constructed substation. There was no rotating machinery.
- (3) It was connected with the 110 KV transmission line to Jasiniec, and with the 60 KV transmission line to the Olowianka and Elblag power plants.
- (4) It was not close to a power plant nor to a railroad.

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25X1

p. Jasiniec Substation (Stacja Jasiniec 110/60/15 KV)

- (1) This substation was located near the Jasiniec /N 53-06, E 17-53/ power station. 25X1
- (2) It was a junction substation connecting the 110 KV line with a 60 KV network to Grudziadz and to Torun.
- (3) 25X1

q. Pakosc Substation (Stacja Pakosc 110/30 KV)

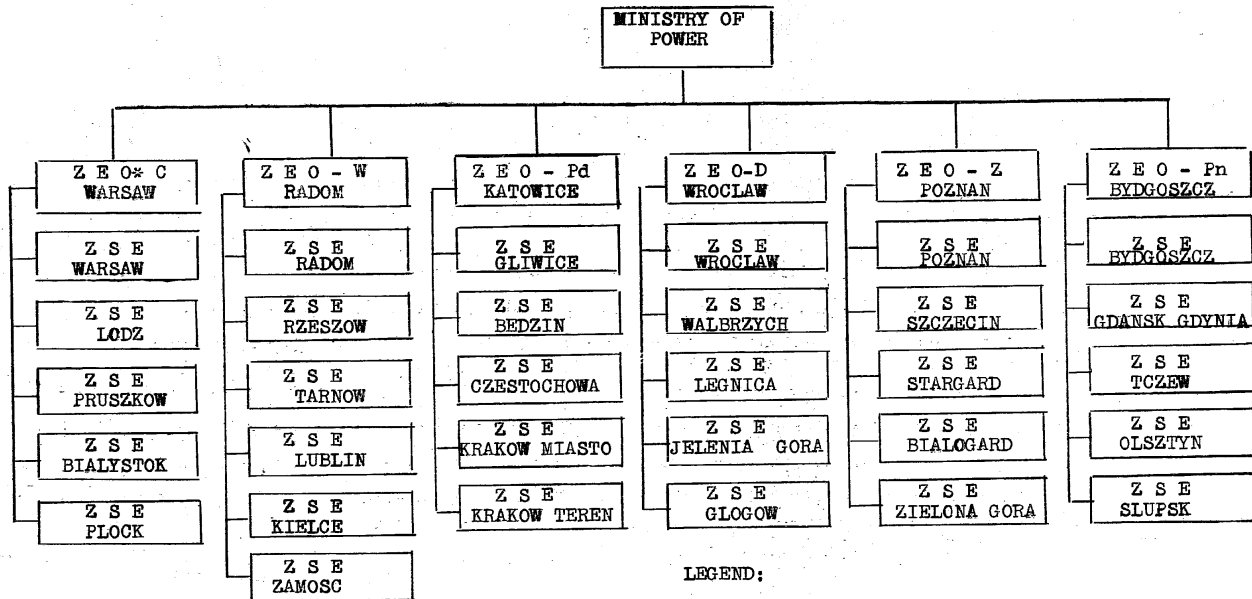
- (1) It was near Pakosc /N 52-48, E 18-06/ and connected the northern and western districts. 25X1
- (2) It had two or three transformers of 110/30 KV.
- (3) It was connected to a 110 KV grid. 25X1

ANNEXES:

- A. Administrative Division of Electric Power System
- B. Operational Structure of Power Dispatching in Poland
- C. Drawing - High Tension Power Network in Poland (Army-3, Navy-2, Air-3, ORR-4)
- D. Warsaw Power Plant - Pinpoint Location
- E. Warsaw Power Plant - Layout
- F. Stalowa Wola Power Plant - Pinpoint Location
- G. Stalowa Wola Power Plant - Layout
- H. Lublin Power Plant - Layout
- I. Hydroelectric Power Plant of Roznow - Pinpoint Location
- J. Hydroelectric Power Plant of Roznow - Layout
- K. Hydroelectric Power Plant of Czechow - Layout
- L. Substation Rozki - Pinpoint Location
- M. Substation Abramowice - Pinpoint Location
- N. Krakow Power Plant - Pinpoint Location
- O. Hydroelectric Power Plant of Pilichowice - Pinpoint Location
- P. Hydroelectric Power Plant of Glebokie Jeziora - Pinpoint Location
- Q. Substation Lebork - Pinpoint Location
- R. Substation Lebork - Layout

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SECRET



NOTICE:

To each Z S E belong several RZSE - REJONOWY ZAKLAD SIECI ELEKTRYCZNYCH (REGIONAL ADMINISTRATION OFFICE OF ELECTRIC POWER NETWORK)

LEGEND:

Z E O - ZARZAD ENERGETYCZNY OKREGU - DISTRICT POWER ADMINISTRATION OFFICE

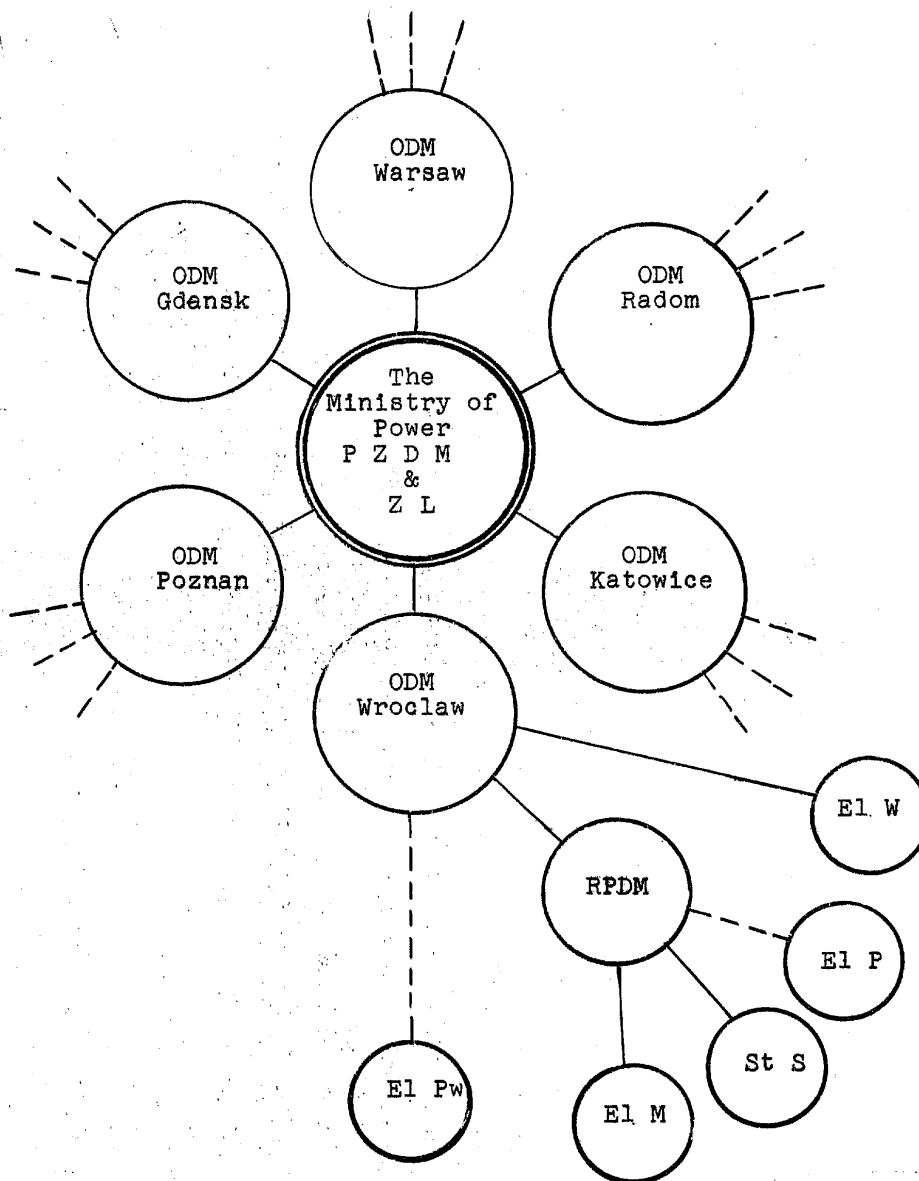
C - CENTRALNY (CENTRAL)
W - WSCHODNI (EASTERN)
Pd - POLUDNIOWY (SOUTHERN)
D - DOLNOSLASKI (LOWER SILESIAN)
Z - ZACHODNI (WESTERN)
Pn - POLNOCNY (NORTHERN)
ZSE - ZAKLAD SIECI ELEKTRYCZNYCH (AREA ADMINISTRATION OFFICE OF ELECTRIC POWER NETWORK)

SECRET
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SECRET
-27-

25X1

ANNEX B: Operational Structure of Power Dispatching in Poland



LEGEND:

PZDM - Panstwowy Zarzad Dyspozycji Mocy - The State Authority of Power Dispatching
 ZL - Zarzad Laczynosci - The Administration of Communications Department
 ODM - Okregowa Dyspozycja Mocy - The District Power Dispatching Office
 RPDM - Rejonowy Punkt Dyspozycji Mocy - Area Power Dispatching Office
 El W - Elektrownia Wydzielona - Detached Power Plant
 El P - Elektrownia Przemyslowa - Industrial Power Plant
 St S - Stacja Sieciowa - Substation
 El M - Elektrownia Mala - Small Power Station
 El Pw - Elektrownia Przemyslowa Wieksza - Large Industrial Power Plant

NOTE: Other ODM setups are similar to ODM Wroclaw

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25X1

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25X1

ANNEX C (CONT'D):

☐ indicates:

25X1

The 100 and 110 KV power network and the sections of high tension transmission lines designed for 220 KV which were partly put into operation in 1953.

The 60 and 30 KV transmission lines supplying the more important industrial regions and armaments factories, the oil industry, and points of power exchange with the USSR, Czechoslovakia, and East Germany.

The principal generating power plants and substations as well as some smaller power plants which were very important for certain areas and localities.

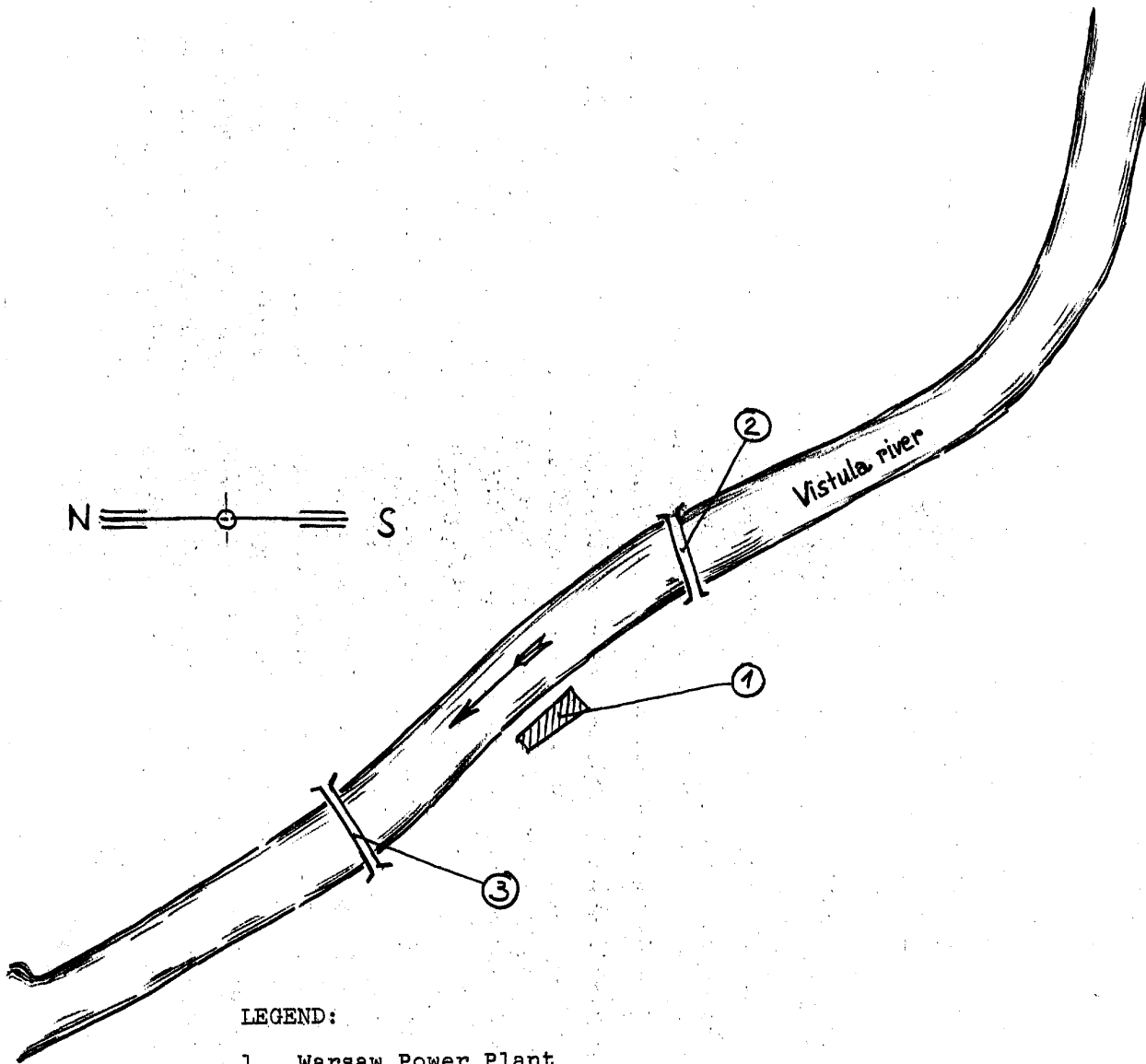
In addition the sketch shows the boundaries of all the administrative districts.

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-30-

25X1

ANNEX D: Warsaw Power Plant - Pinpoint Location Overlay based on the city plan 1:25,000



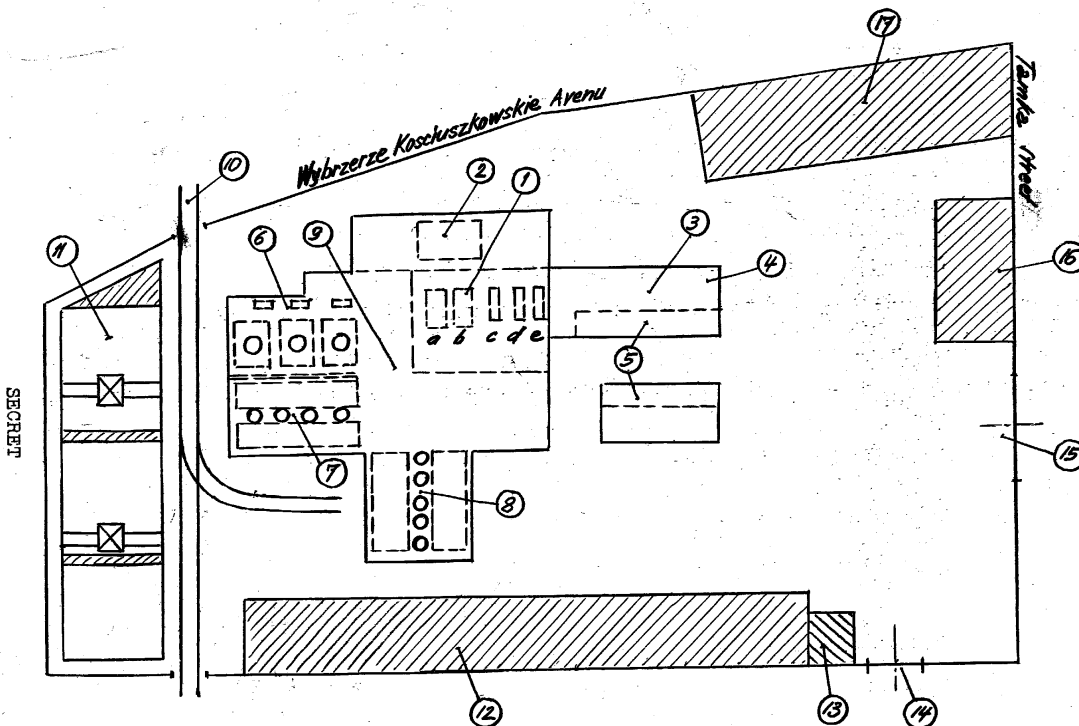
LEGEND:

1. Warsaw Power Plant
2. Poniatowski Bridge
3. Slasko-Dabrowski Bridge

SECRET

ANNEX E: Warsaw Power Plant - Layout
A Sketch, Approximate Scale 1:700

SECRET
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SECRET

SECRET
-32-

25X1

ANNEX E (CONT'D):

LEGEND:

1. Machine Hall
 - a. Turbogenerator 35 MVA
 - b. Turbogenerator 35 MVA
 - c. Turbogenerator 15 MVA
 - d. Turbogenerator 10 MVA
 - e. Turbogenerator 5 MVA
2. Control Room
3. & 4. Switching room, offices
5. Transformers
6. Boiler House No. III - three modern boilers
7. Boiler House No. II - 10 old boilers
8. Boiler House No. I - 16 very old boilers
9. Condensers
10. Railroad siding
11. Fuel dump, capacity of about 300 tn.
12. Workshops
13. Guard room
14. Gate for employees
15. Main gate for trucks
16. Vehicle repair workshop
17. Apartment building for employees

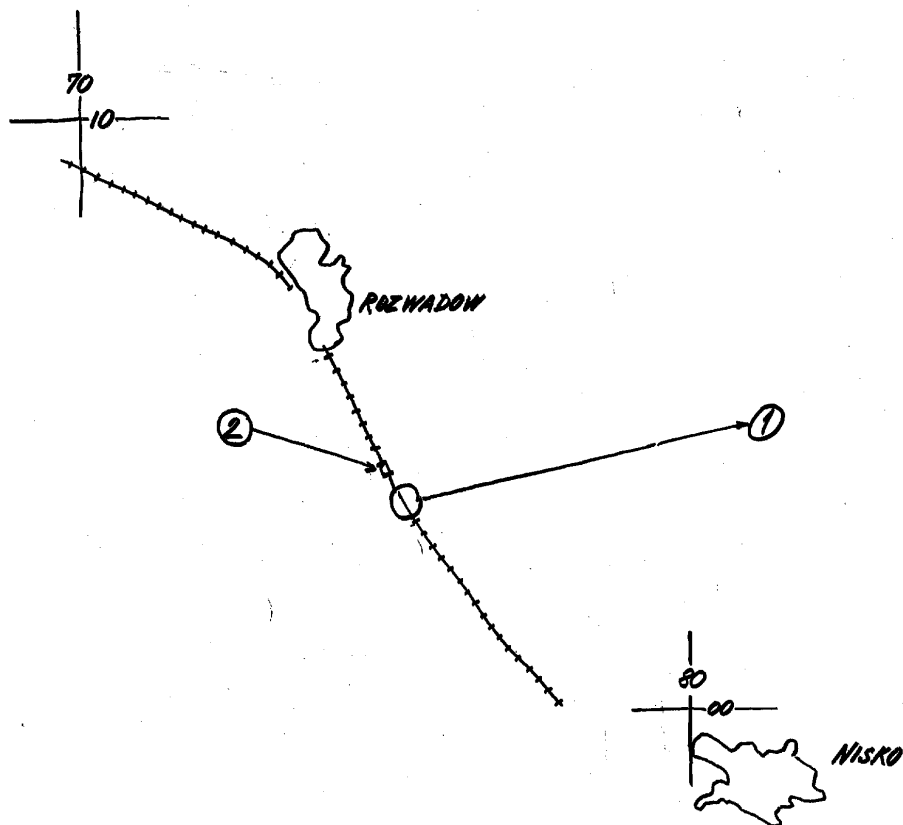
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-33-

25X1

ANNEX F: Stalowa Wola Power Plant - Pinpoint Location

Overlay Based on Map of Poland 1:100,000 Sheet S-16
(GSGS 4416)



LEGEND:

1. Area where Power Plant Stalowa Wola is located
2. Railway Station Stalowa Wola

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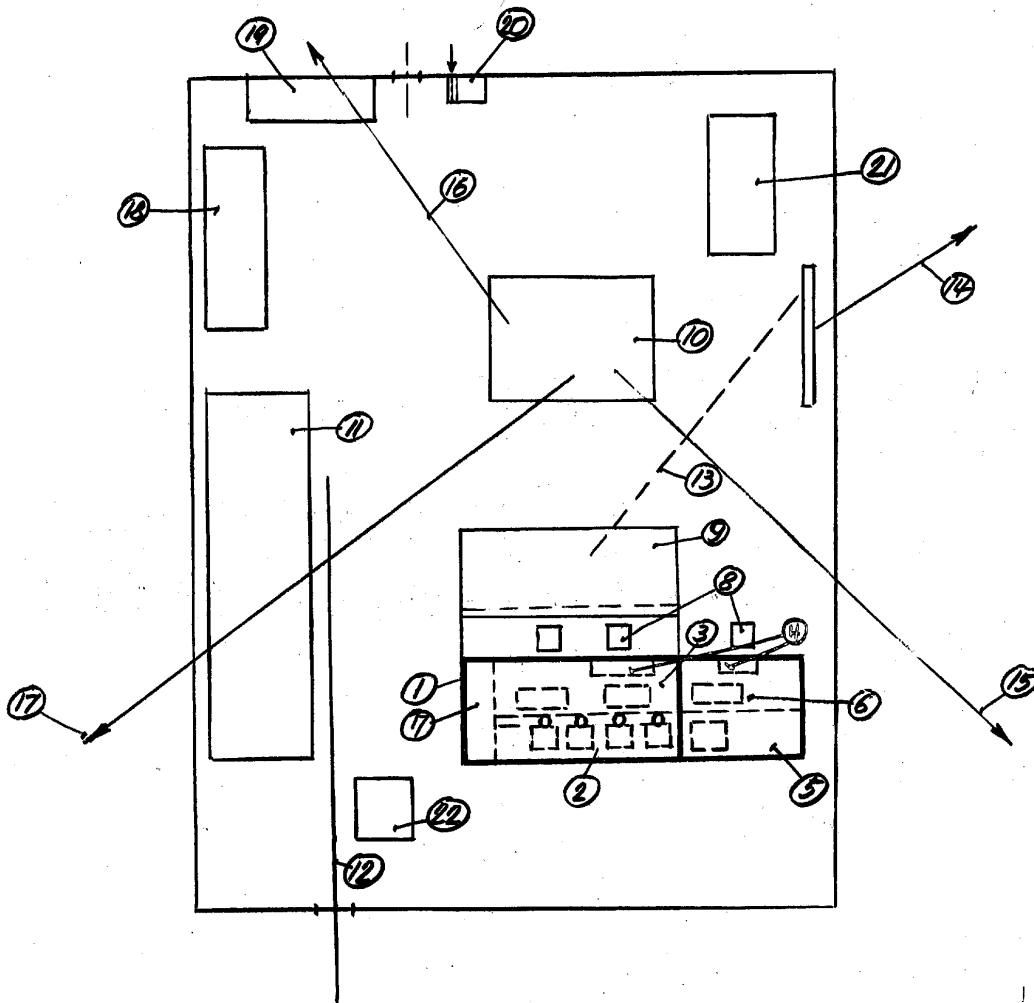
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-34-

25X1

ANNEX G: Stalowa Wola Power Plant - Layout

A ☐ Sketch Approximate Scale 1:600

25X1



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-35-

25X1

ANNEX G (CONT'D):

1. Main building
2. Boiler room, 4 x 45 T/H boilers
3. Two 2 x 25 MVA turbines
4. Control rooms
5. New boiler 140 T/H
6. New turbogenerator 35 MVA
7. Workshop
8. Transformers
9. Switchyard 30 KV
10. Switchyard 110 KV
11. Coal dump
12. Railroad siding
13. Cable line to Stalowa Wola Steel Works
14. 30 KV transmission line
15. 110 KV line to Ostrowiec
16. 110 KV line to Boguchwala
17. 110 KV line to Abramowice
18. Workshop and mess hall
19. Small provision shop
20. Guard house
21. Administration building
22. Water pumps

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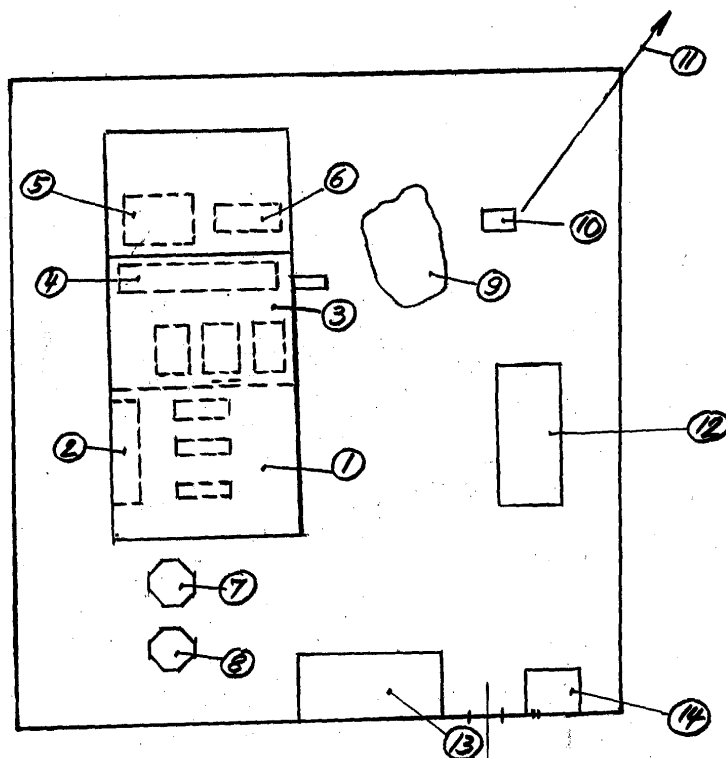
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-36-

25X1

ANNEX H: Lublin Power Plant - Layout

A ☐ Sketch Approximate Scale 1:700

25X1



LEGEND:

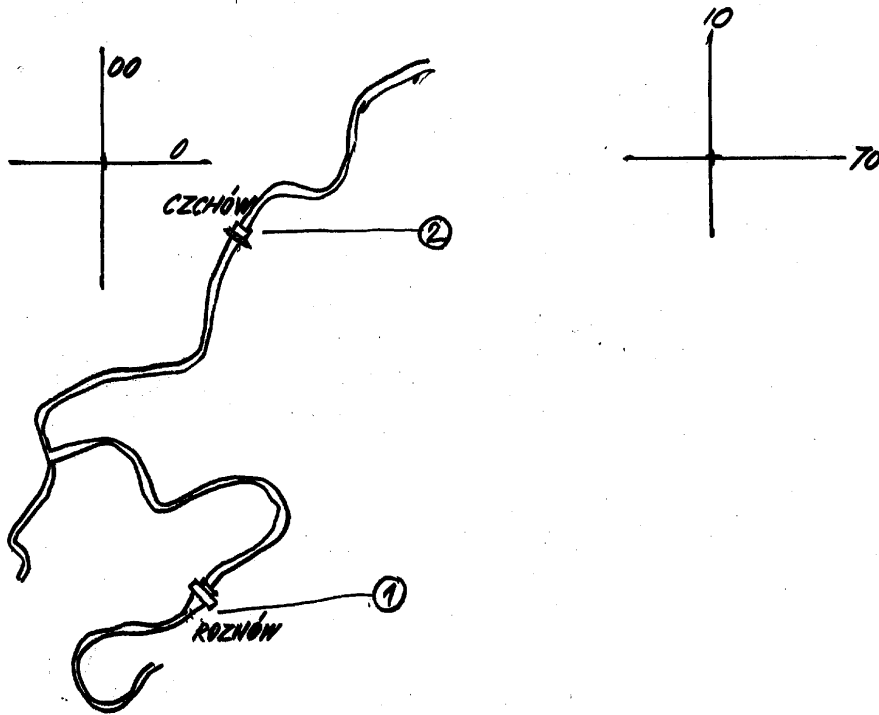
1. Turbine and machine hall, three Ljungstrom turbogenerators, 3 MW, 2 MW, 1 MW
2. Control room
3. Boiler room
4. Coal supply room, carried by conveyor belt
5. New 50 tn. boiler
6. New 10 MW turbogenerator
7. & 8. Cooling towers
9. Coal dump
10. Transformer 4 MVA 5/30 KV
11. 30 KV line to Abramowice
12. Administration building
13. Administration office and laboratory
14. Guard house

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-37-

25X1

ANNEX I: Hydroelectric Power Plant of Roznow - Pinpoint Location
Overlay based on map of Poland 1:100,000 Sheet T-15 (GSGS 4416)

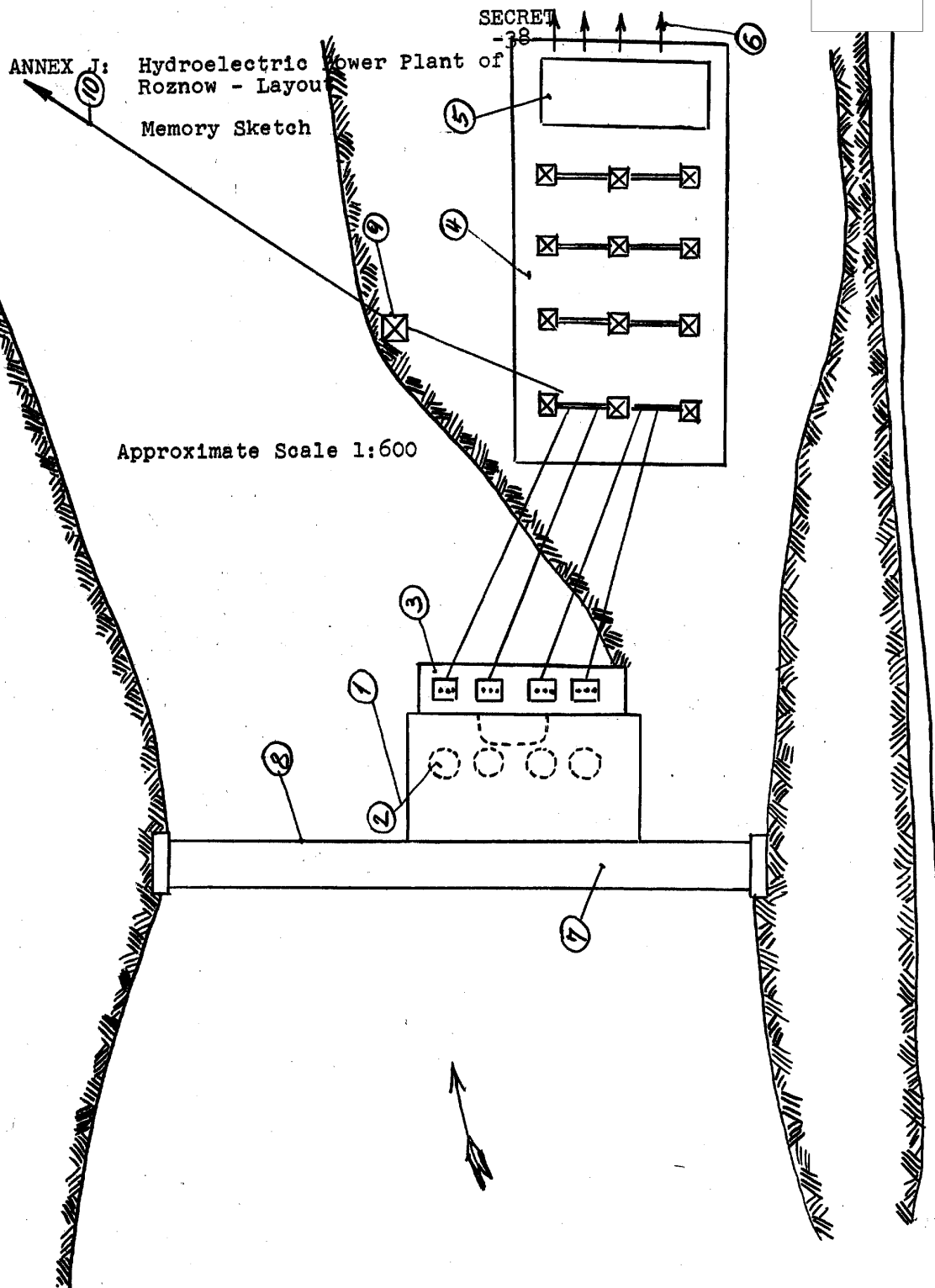


LEGEND:

1. Area where Hydroelectric Power Plant Roznow is located.
2. Area where Hydroelectric Power Plant Czchow is located.

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25X1



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-39-

25X1

ANNEX J (CONT'D):

1. Main building
2. Four vertical turbines, (each of 12,5 MVA)
3. Four transformers
4. Switchyard 110 KV
5. Switch house 30 KV
6. Line 30 KV
7. Dam
8. Locks
9. 110 KV tower
10. Transmission line to Moscice

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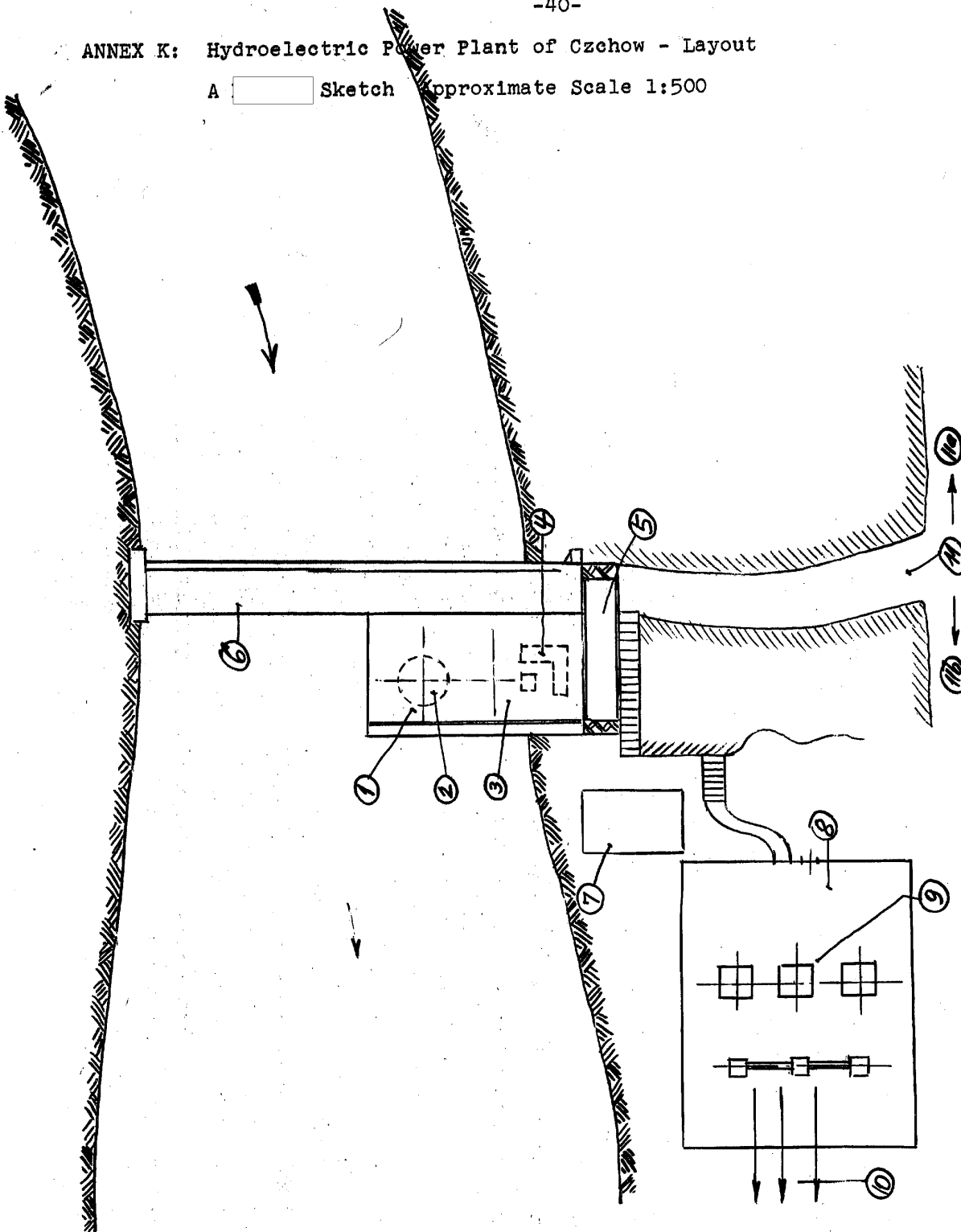
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-40-

25X1

ANNEX K: Hydroelectric Power Plant of Czechow - Layout

A ☐ Sketch Approximate Scale 1:500

25X1



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-41-

25X1

ANNEX K (CONT'D):

LEGEND:

1. Turbine hall
2. Vertical turbine 5 MVA
3. Free space for the new turbine to be installed
4. Control room
5. Crane
6. Dam
7. Administration building
8. Switchyard 30 KV
9. Three transformers
10. A line to 30 KV transmission line
11. Road leading to the power plant
- 11a. Highway to Roznow
- 11b. Highway in the direction of Krakow

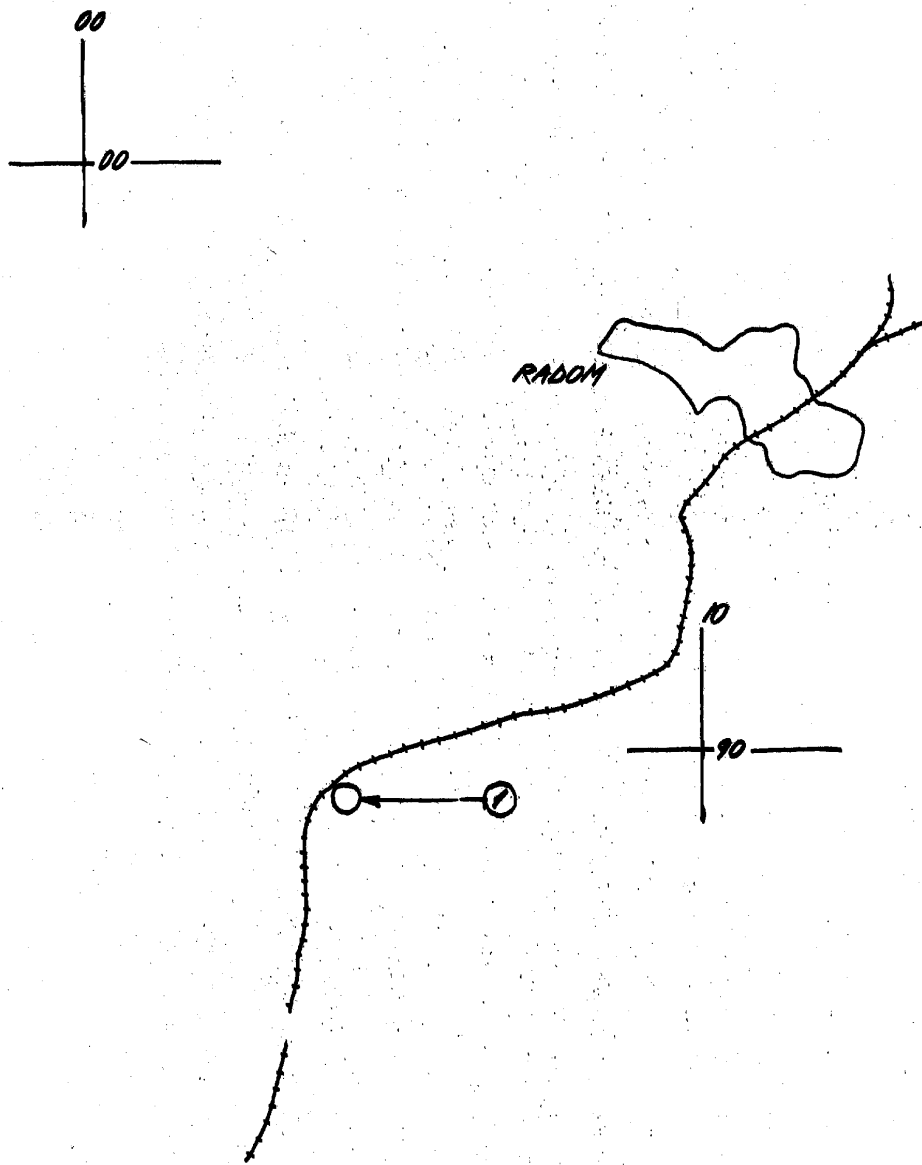
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-42-

25X1

ANNEX L: Substation Rozki - Pinpoint Location

Overlay based on map of Poland 1:100,000 Sheet Q-15 (GSQS 4416)



LEGEND:

1. Area where Substation Rozki is located

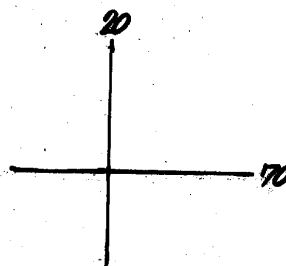
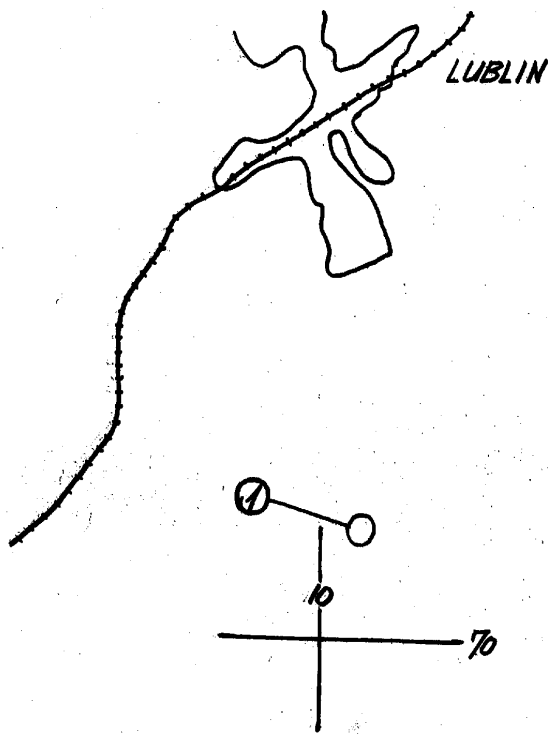
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-43-

25X1

ANNEX M: Substation Abramowice - Pinpoint Location

Overlay based on map of Poland 1:100,000 Sheet R-17 (GSGS 4416)



LEGEND:

1. Area where Substation Abramowice is located

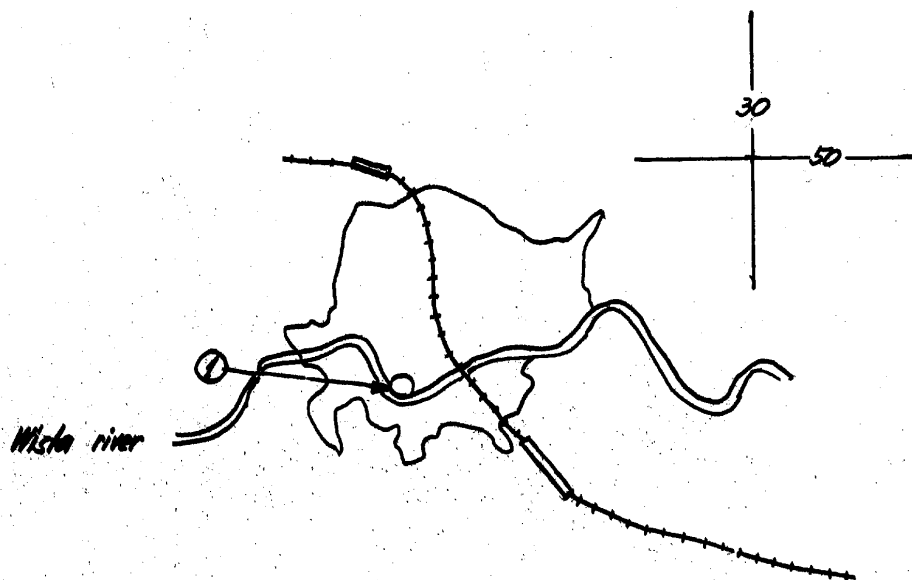
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-44-

25X1

ANNEX N: Krakow Power Plant - Pinpoint Location

Overlay based on map of Poland 1:100,000 Sheet T-14 (GSGS 4416)



LEGEND:

1. Area where Power Plant Krakow is located

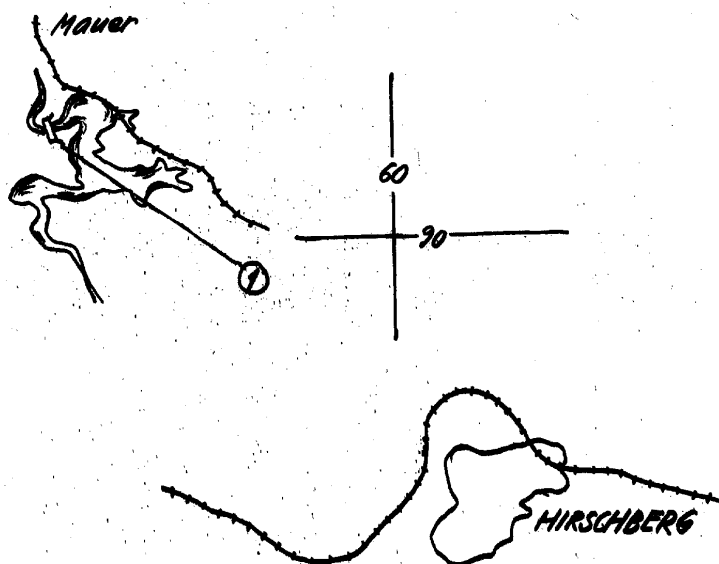
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-45-

25X1

ANNEX O: Hydroelectric Power Plant of Pilichowice - Pinpoint Location

Overlay based on map of Poland 1:100,000 Sheet R-10 (GSGS 4416)



LEGEND:

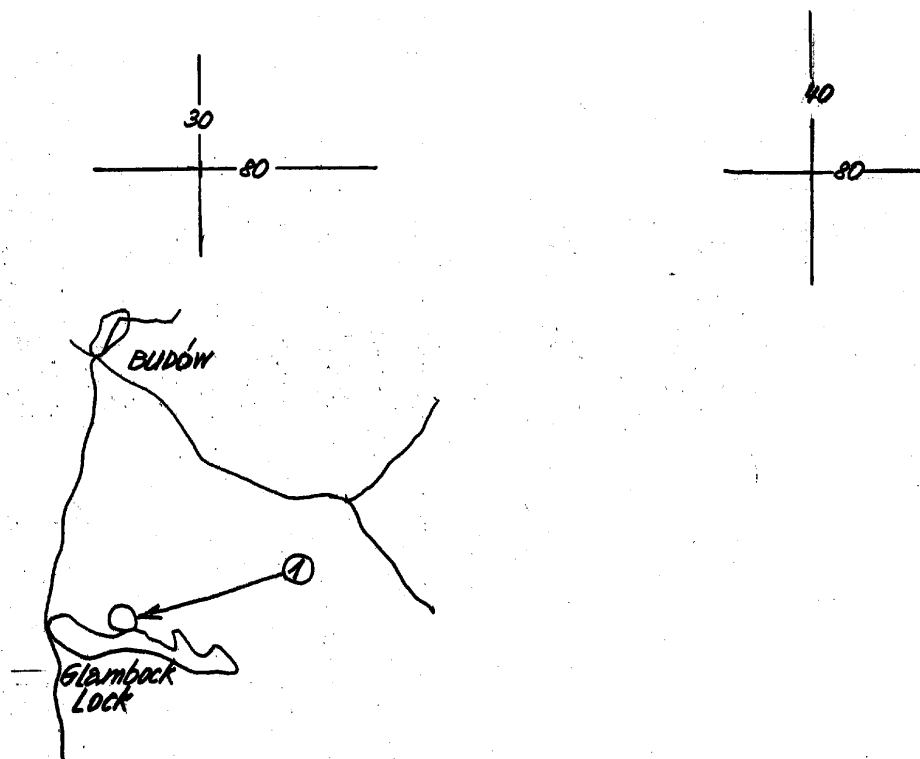
1. Area where Hydroelectric Power Plant Pilichowice is located

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-46-

25X1

ANNEX P: Hydroelectric Power Plant of Glebokie Jeziora - Pinpoint Location
Overlay based on map of Poland 1:100,000 Sheet J-12 (GSGS 4416)



LEGEND:

1. Area where Hydroelectric Power Plant Glebokie Jeziora is located

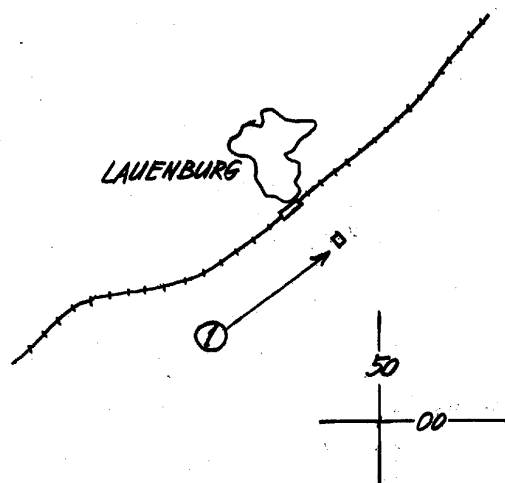
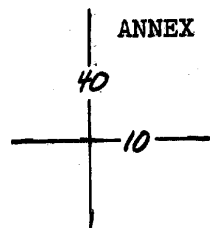
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-47-

25X1

ANNEX Q: Substation Lebork - Pinpoint Location

Overlay based on map of Poland 1:100,000 Sheet J-12
(GSGS 4416)



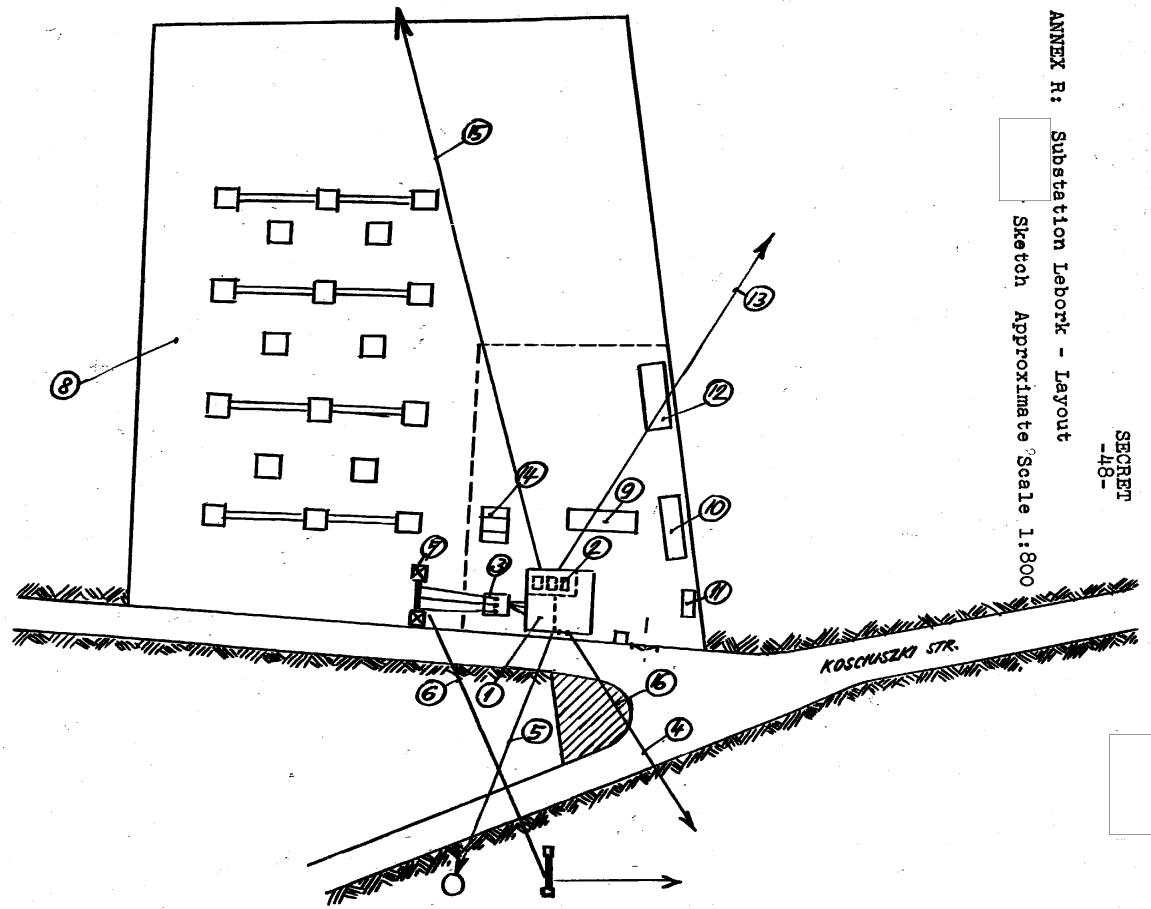
LEGEND:

1. Area where Substation Lebork is located

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ANNEX R: Substation Leborok - Layout

Sketch Approximate Scale 1:800



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-48-

SECRET
-49-

25X1

ANNEX R (CONT'D):

LEGEND:

1. Switch house 40/15, part of the building is used for administrative purposes
2. Three transformers 40/15 KV, one 2 MVA, one 1.5 MVA, one 0.8 MVA
3. One transformer 40/60-5 MVA
4. 15 KV line to Wejherowo
5. 40 KV line to Glebokie Jeziora
6. 110 KV line to Gdynia
7. High tension 110 KV tower
8. Switchyard
9. A barrack
10. Garages and vehicle repair workshop
11. Gasoline tank capacity of 0.8 tn.
12. Shed for transformers
13. 15 KV line to Lebork and area
14. Garages
15. Line to the local power plant
16. Administration building

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